

REMARKS

Reconsideration of the above amendment and the following remarks is respectfully requested.

Claims 29, 45, 47, 60-62 were pending. Claims 29 and 45 are currently amended. New claims 63-66 are added. Support for the amendment can be found on page 3 of the specification. No new matter is introduced by way of this amendment.

Claims 29, 45, 47, 61 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 94/26086 in view of either JP 9-47759 or DE 19700354, further in view of U.S. Patent No. 6,127,424 to Triboulet (hereafter "Triboulet") and U.S. Patent No. 4,006,283 to MacKenzie (hereafter "MacKenzie"). Applicant respectfully traverses for reasons as set forth below.

Claims 29 and 45 as amended include a specific recitation of crosslinking the plastic waste materials in the presence of the peroxide. The claims as amended are therefore directed to a method of producing a substantially homogeneous plastic material comprising cross-linked polyethylene and polypropylene, the latter polymers being from pre-sorted plastic wastes, such as plastic bottles. Claims 29 and 45 are further amended to specify that the peroxide cross-linking agent is solid. Support for this amendment is inherently contained in the specification on page 3, wherein the peroxide is characterized as in ground form.

WO 94/26086 (hereafter referred as "primary reference") is related to pellets formed from two non-homogenous polymers for using as waste water filtration. This reference is specifically distinguished in the specification of the present invention as not utilizing post-consumer plastic waste as its source material. In addition, the end products in the reference are non-homogeneous whilst those of the present invention are homogeneous by using cross-linking material such as peroxide or peroxide-bearing waste. These distinctions are also explicitly acknowledged by the Examiner.

The Examiner then alleges that JP 9-47759 or DE 19700354 (hereafter collectively referred as "secondary references") discloses using plastic waste to form adsorbent material for waste water treatment. However, neither second references teach or suggest treating

the plastic waste materials with a cross-linking material to provide a homogenous end product. This deficiency is not cured by Triboulet or MacKenzie.

Firstly, Applicants submit that the connection between Triboulet disclosure with the primary reference and the secondary references is tenuous, and should not have been combined in the manner as suggested by the Examiner. Triboulet is related to a method of recycling cross-linked polymers. Cross-linked polymeric materials are typically not substantially thermoplastic (i.e., ability to be repeatedly softened upon heating and hardened upon cooling) because of the presence of the three-dimensional cross-links. They are therefore not typically recycled through thermal means. Triboulet introduced mechanical mixing (or shear stress) to the cross-linked material, presumably to weaken the cross-linked network through mechanical means. In other words, recycling cross-linked material is an entirely different process from recycling non-crosslinked thermoplastic material such as linear polyethylene and polypropylene, the main component of plastic waste material of the instant application. One skilled in the art at the time of the invention was made would have no motivation to look into the recycling of cross-linked materials. Accordingly, Applicant respectfully submits that this is a case of impermissible hindsight reconstruction in which the examiner, having the benefit of the knowledge of the present invention, identifies and combines multiple references that would not have been combinable in the view of one skilled in the art at the time the invention was made.

Secondly, even assuming Triboulet is combinable with the primary and secondary references in the manner as indicated by the Examiner, Triboulet fails to cure the deficiency of the disclosure of the primary and secondary references. As noted above, the secondary references do not teach or suggest treating the plastic waste materials with a crosslinking material to provide a homogenous end product. Neither does Triboulet. In Triboulet, the polymeric material to be recycled is already cross-linked.

Finally, MacKenzie further fails to cure the deficiency of the disclosures of the primary reference, second references and Triboulet. The Examiner is of the opinion that MacKenzie discloses the "typical proportion of peroxide used to crosslink polyethylene". Applicant submits that MacKenzie teaches the use of highly volatile t-butyl peroxide, which is different from the solid peroxide used in the instant application.

MacKenzie specifically discloses that polyethylene "must be in particulate form" and be "cooled to 30 to 35 degrees" prior to the addition of the liquid t-butyl peroxide. (See, e.g., col. 2 lines 55-56, and col. 4, lines 15-16.) Both of the above conditions are essential in arriving at the proportion of the t-butyl peroxide used due to its volatility. The teaching in MacKenzie, however, would have no bearing in arriving at an appropriate amount of the solid peroxide needed for the instant application because neither of the above conditions is employed. Applicant therefore respectfully submits that the teaching of MacKenzie has no applicability in the instant application and does not cure the deficiency of the previously discussed references.


In conclusion, Applicant respectfully submits that the claims as amended are not rendered obvious over the combined references.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

All of the claims remaining in the application are now clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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